

## PORTUGAL

*By a Special Contributor*

Portugal has only one metallic mine now in operation: the Neves-Corvo copper and tin underground mine in the southern region of the country. Neves-Corvo was owned and operated by Sociedade Mineira de Neves-Corvo SA (Somincor), a joint venture between the Portuguese state-owned company Empresa de Desenvolvimento Mineiro (EDM; with 51%) and Rio Tinto plc (49%). The mine has now been acquired by a Canadian company, EuroZinc Mining Corp.

The deposits at Neves-Corvo were discovered in 1977 by a joint venture of Portuguese (State) and French (private) interests. Further exploration and evaluation continued until the end of 1983, at which stage Rio Tinto was invited to participate in the project. Following a period of evaluation, Rio Tinto purchased the French 49% interest in 1985. Commercial production started in 1989 at the initial rate of 1 Mt/y of ore.

Production reached a peak of 2.3 Mt of ore in 1998. In 2002, Neves-Corvo hoisted and treated 1.75 Mt of copper and tin ores and produced 319,400 dmt (dry metric tonnes) of copper concentrates (24.2% Cu) and 550 dmt of tin concentrates (62.4% Sn). The concentrates are railed to the port of Setúbal, 50 km south of Lisbon and 170 km northwest of the mine, for shipping to smelters around the world.

In 2002, a prospective sale of part of Somincor's share capital proved unsuccessful and during 2003 a new sale process for the privatisation of Somincor was launched. In January 2004, the government announced EuroZinc Mining to be the prospective buyer and EuroZinc completed the purchase of 100% of the shares of Somincor in November 2004.

The shares were purchased from EDM (51%) and Rio Tinto (49%) for a total purchase price of €128 million (approximately US\$155 million). Neves Corvo is one of the highest grade copper mines in the world. Operating results to date confirm that it is also a very profitable copper mine, and an independent technical report on the mine confirms that the mine still has a mine life of over ten years based on existing reserves. At the beginning of 2003, geological reserves included: 30.6 Mt of copper ores at an average grade of 5.21% Cu; 1.6 Mt of tin and copper-tin ores at 9.73% Cu and 2.31% Sn; and 50.4 Mt of complex ore resources (zinc) at 5.99% Zn.

The acquisition of the Neves Corvo mine has allowed EuroZinc to achieve its long stated objective of becoming a mid-tier base metals producer. The company says its next objective will be to expand cash flow and diversify by exploiting the extensive zinc resources of Neves Corvo, and by bringing the nearby Aljustrel mine into production. The Aljustrel zinc mine, which the company also owns, is located approximately 40 km from Neves Corvo and is

currently on care and maintenance, but EuroZinc has completed a positive feasibility study for putting the mine into production.

EuroZinc Mining has signed off-take and technical-support agreements with Boliden AB and Outokumpu Oyj. Under the agreement with Boliden, from January 2005, EuroZinc will deliver 150,000-200,000 t/y of copper concentrates approximately 50% of the mine's output and representing 20% of Boliden's external concentrate requirements to Boliden's smelters for a period of ten years. Treatment charges will be negotiated on an annual basis. In addition, Boliden is providing a US\$10 million, one-year loan to EuroZinc. Outokumpu and EuroZinc have signed a technical-services agreement under which the former will supply expert services, processing equipment and processing technology for the next nine years to EuroZinc's processing plants in Portugal. Outokumpu has a 49% interest in Boliden.

Eurozinc also has the Malhadinha exploration concession comprising some 40 km<sup>2</sup> surrounding the existing Aljustrel and Gavião mining leases. The concession area has been the focus of various regional exploration campaigns in the past by Portuguese State agencies and private companies, and numerous gravity targets have been identified along strike to the known orebodies at Aljustrel. EuroZinc reports that it has completed additional detailed geophysical surveys and re-processed the available gravity data, and that a number of anomalies will be examined further by detailed geological mapping, geophysics and diamond drilling.

Tungsten has been mined at Panasqueira for more than 100 years, and from 1970 to 1994 the mine was owned and operated by Beralt Tin & Wolfram (Portugal) SA, a subsidiary of Anglo American Corp. From 1994 until March 2003, the mine was owned and operated by Avocet Mining plc of the UK.

In 1999, the operation was threatened with closure by low tungsten prices but, at the end of that year, Avocet secured contracts for the period 2000-02 with minimum sales prices. However, in January 2002, low tungsten prices led to a decision to postpone a 40% production increase. During 2002, Panasqueira produced 95,000 mtu (metric tonne units) of tungsten.

Avocet decided to refocus entirely on gold and, in March 2003, it completed the sale of the company's tungsten assets to Salish Ventures Inc (subsequently renamed Primary Metals Inc). Vancouver-based Primary Metals is 49%-owned by Avocet and is listed on the TSX Venture Exchange. It acquired Beralt Tin and Wolfram (Portugal) SA in the form of a reverse takeover. In February this year, it announced the suspension of operations at Panasqueira, and an application was made to the court for the appointment of an administrator. The company cited a decrease in the US dollar exchange rate against the euro during 2003 and low tungsten prices. Also, until the end of 2003, Beralt had shipped most of its product under contracts negotiated two years previously at prices significantly higher than spot market prices, but the company was unable to negotiate further contracts at favourable prices.

Mineral exploration activity carried out in Portugal is mainly focused on precious and base metals, mainly gold, copper and zinc. Several geological environments with epithermal gold vein mineralisation within the Iberian Central Area have been explored. The most relevant results for gold have been obtained in Valongo/Gondomar (Connary Minerals), in Jales/Gralheira (Kernow Resources) and in Penedono (Rio Narcea Gold Mines). Exploration for base metals has been carried out in the Iberian Pyrite Belt by companies such as Rio Tinto (especially in the Caveira area), EuroZinc (Aljustrel) and Somincor (Neves-Corvo).

Exploration licences have also been granted to Rio Narcea Gold Mines for nickel and platinum group metals in the mafic and ultramafic rocks of the Ossa Morena Zone in southern Portugal. Rio Narcea initiated its 2003 nickel sulphide exploration programme in the Ossa Morena region with an 11,000 line km airborne geophysical survey. During the year, it completed 8,596 m of drilling in 30 holes. Disseminated magmatic nickel sulphides, including thick sections of low-grade nickel mineralisation, were intersected in all of the six targets drilled.

The company reports that recent PGM assays received for two drill holes on the Cabeco de Vide property indicate the presence of anomalous PGM mineralisation. The best intercept occurs in peridotites in hole PCV-02 at a depth of 213 m where an interval of 2.3 m averages 1.3 g/t combined PGM+ Au within a larger interval of 20.2 m averaging 0.5 g/t combined PGM + Au, 0.15% Ni and 0.03% Cu.

Table following page.

**Production (tonnes except where stated)**

	<b>2000<sup>r</sup></b>	<b>2001<sup>p</sup></b>	<b>2002<sup>e</sup></b>
Uranium (U <sub>3</sub> O <sub>8</sub> )	16	5	-
Iron and manganese	11,800	-	-
Copper concentrate	319,358	344,517	319,415
Tin concentrate	2,325	2,117	574
Tungsten concentrate	1,269	1,193	1,179
Marble and other carbonated stones	922,927	832,857	853,678
Granite ornamental and similar stones	700,661	871,572	877,673
Paving stone (10 <sup>3</sup> t)	1,037	1,045	1,019
Slates	43,373	33,521	33,890
Limestone, gypsum, etc (10 <sup>3</sup> t)	14,248	13,325	13,952
Gravel, sand and crushed stone (10 <sup>3</sup> t)	71,442	89,317	90,389
Clay and kaolin (10 <sup>3</sup> t)	4,428	2,728	2,755
Barites	48	25	24
Pegmatites with lithium	9,352	11,571	16,325
Salt	584,516	625,785	604,969
Quartz	37,842	20,436	16,290
Feldspar	136,730	112,923	124,117
Feldspathic sands	573,947	590,384	603,959
Pegmatites	3,600	8,300	7,800
Diatomite	686	387	-
Talc	9,895	8,362	8,916

Source: IGM – Instituto Geológico e Mineiro.

r: revised figures for ornamental and industrial stones.

p: preliminary figures for ornamental and industrial stones.

e: estimated for ornamental and industrial stones and preliminary for ores and minerals.

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